Amendment to the Specification:

Please replace the paragraph beginning at page 6, line 19, with the following amended paragraph:

-- Voice band call set up is controlled by a Telco switch matrix 240 such as SS7. This makes point-to-point connections to other subscribers for voice band communications. The X-DSL communications may be processed by a universal line card such as line card ~~212~~ 210. That line card includes a plurality of AFE's e.g. 212-214 each capable of supporting a plurality of subscriber lines. The AFEs are coupled via a proprietary packet based bus 216 to a DSP 218 which is also capable of multi-protocol support for all subscriber lines to which the AFE's are coupled. The line card itself is coupled to a back-plane bus 220 which may in an embodiment of the invention be capable of offloading and transporting low latency X-DSL traffic between other DSPs for load balancing. Communications between AFE's and DSP(s) are packet based which allows a distributed architecture such as will be set forth in the following FIG. 3 to be implemented. Each of the DSLAM line cards operates under the control of a DSLAM controller 200 which handles global provisioning, e.g. allocation of subscriber lines to AFE and DSP resources. Once an X-DSL connection is established between the subscriber and a selected one of the DSLAM submodules, e.g. AFE and DSP the subscriber will be able to access any network to which the DSLAM is connected. In the example shown the DSLAM couples via server 230 with Internet 140. --

Please replace the paragraph beginning at page 14, line 5, with the following amended paragraph:

-- The modules of the DSP 218 and AFE 214 support both CAP QAM with a significant overlap or sharing of components. That functionality is achieved in the manner set forth below in which each of the modules of the transmit and receive path are compared in terms of the manner in which they handle packets corresponding with channels which implement CAP ~~QUAM~~ QAM or DMT line codes. –

Please replace the paragraph beginning at page 17, line 28, with the following amended paragraph:

-- ~~**RECEIVE PATH - DMT LINE CODE**~~

RECEIVE PATH - CAP LINE CODE

The CAP/QAM receive path consists of the following blocks: analog inputs 396, ~~,~~392, 388 to the ADC 382, decimation Filter 364; Downconverter 365; Matched Filter (uses TEQ 404); feedforward equalizer (uses FFT engine 322, FEQ 426, and cyclic prefix removal 424); slicer/demapper 426,428; Decision Feedback Equalizer (not shown); demapper 426,428; and deframer 434. --

Please replace the paragraph beginning at page 18, line 15, with the following amended paragraph:

-- Next the data is ~~transfered~~ transferred to the DMT where the FIR filter utilized to implement the TEQ function is instead utilized with new coefficients loaded to the FIR filter. The matched filter function 404 performs FIR filtering of the received complex data with a filter matched to the shaping filter used in the transmitter. The filtered data is passed to the feedforward equalizer.--

Please replace the paragraph beginning at page 19, line 8, with the following amended paragraph:

-- As is evident from the above discussion each module in the transmit and receive paths reconfigures itself responsive to control or header information in each of the packets. The FFT for example transmits DMT packets by modulating baseband frequency up to carrier frequency and demodulates received DMT line code packets from carrier frequency down to baseband. For CAP QAM line code packets transmission involves frequency domain filtering with an FFT and an IFFT pair to perform low ~~ass~~ pass filtering, pulse shaping and egress control. For CAP QAM reception the FFT 332 is used to perform frequency domain filtering to perform linear equalization to clean up the spectrum of received packets. --

Please replace the paragraph beginning at page 23, line 8, with the following amended paragraph:

-- In FIG. 8B processing for the AFE I/O interface is set forth. That interface includes AFE MAC 346, PAD 348 and FIFO controllers 350,356 and associated buffers 352,354. Processing begins at start block 850 from which control passes to decision process 852. In decision process 852 a determination is made by the AFE MAC as to whether the Bus Valid signal line is asserted. In the event of an affirmative determination control is passed to process 854. In process 854 the header is read and in the following decision process 856 a determination is made as to whether the AFE ID 728 (See FIG. 7B) in the header matches the AFE ID. In the event of an affirmative decision ~~conrol~~ control is passed to decision block 858. In decision block 858 a determination is made as to whether a read or write tag is present in header field 714 (See FIG. 7B). If a read operation is indicated then ~~control passes then~~ in process 860 the AFE MAC asserts the bus valid signal line after which control passes to decision block 862. In decision block 862 the address field 704 in the header (See FIG. 7B) is read to determine whether a register or channel access is requested by the DSP. If a read register request has been indicated then in processes 864-870 the address to be read, the length of the data to be read and the actual reading and packetizing of the data on the bus with the appropriate header are implemented by the combined AFE I/O interface components. Subsequently, control passes to process 888 in which the bus is deasserted and control is passed to next block 896. --

Please replace the abstract beginning at page 27, line 5, with the following amended paragraph:

-- ~~A method and apparatus for an~~ An X-DSL modem supporting multiple X-DSL line codes~~,~~ ~~protocols for a plurality of channels is disclosed~~ including discrete multi-tone (DMT) and carrierless phase and amplitude (CAP). ~~Each channel is packetized and each packet includes control information for controlling the performance of the components/modules on the transmit and receive path. Further flexibility is derived from an architecture which incorporates discrete and shared modules on the transmit path and the receive path. The transmit path and receive path modules are collectively controlled by control information in~~

~~selected ones of the packets. This control information is used by selected ones of the modules to appropriately process each channel in conformance with the corresponding X-DSL protocol, operating on each channel's packets at an appropriate rate, and protocol for the channel. The DSP exhibits a favorable form factor, and flexibility as to protocols and line codes, and numbers of channels supported.~~ The modem includes: components coupled to one another to form a transmit path and a receive path. The components include an encoder component and a Fourier transform component. The encoder component encodes data associated with a CAP communication channel into QAM symbols and encodes data associated with a DMT communication channel into DMT sub-symbols. The Fourier transform component couples to the encoder component on the transmit path for transforming DMT sub-symbols from a frequency-to-time domain and for transforming QAM symbols from the time-to-frequency domain followed by a filtering in the frequency domain and a subsequent transformation back from the frequency-to-time domain to effect a pulse shaping function without requiring a discrete pulse shaping component in the transmit path. –